Important Advances in Clinical Medicine

Epitomes of Progress—Otolaryngology

The Scientific Board of the California Medical Association presents the following inventory of items of progress in otolaryngology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist the busy practitioner, student, research worker or scholar to stay abreast of these items of progress in otolaryngology which have recently achieved a substantial degree of authoritative acceptance, whether in his own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Otolaryngology of the California Medical Association and the summaries were prepared under its direction.

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Conservation of Hearing In Acoustic Neurilemmoma Excision

PRESERVING HEARING at acoustic neurilemmoma excision is an ultimate and logical extension of micro-oto-neurological surgery. Hearing conservation is an additional feature of the fundamental surgical goals of total tumor removal, preservation of life and VIIth nerve function. Both suboccipital and middle cranial fossa operative approaches have been described to save hearing in VIIIth nerve tumors. Recently the classic neurosurgical suboccipital approach coupled with micro-oto-surgical techniques has allowed total tumor removal with preservation of residual preoperative hearing in selected patients.

Several reasons can be given for conservation of hearing in acoustic neurilemmoma surgical operation: (1) The tumor may involve the only hearing ear. (2) Preoperatively the affected ear may have normal function. (3) Residual hearing in this ear postoperatively may give environmental sound awareness on the involved side. (4) The ability to locate the origin of sounds may be preserved. (5) The ability to understand in a noisy environment may exist if enough hearing is preserved in the ear in which the operation is done. The future functioning of the opposite ear is unknown. Presbycusis, sudden hearing loss or any of a number of other types of hearing deficit could develop.

The cases of ten patients with acoustic neurilemmoma and residual preoperative hearing were evaluated. Seven of the ten patients had some aspect of hearing preserved after microsurgical removal of the acoustic neurilemmoma. Three of the ten patients had von Recklinghausen's disease and in these hearing was lost. Of the seven patients who had some hearing preserved, four had more hearing loss postoperatively and three had postoperative thresholds equal to preoperative levels. Reviewing the opposite ear of the seven patients who had some hearing preserved postoperatively, all had normal functioning for speech. However, five had varying degrees of high frequency sensorineural loss in the ear that had no tumor. Eighteen months postoperatively, one patient with equal preoperative and postoperative hearing in the involved ear had progressive, sensorineural hearing loss bilaterally. This patient was functioning with a mild loss for speech in the ear not operated upon and with a moderately severe loss in the postoperative ear. Speech sound discrimination was good bilaterally, 92 percent

and 82 percent, respectively. The patient was fitted with a postauricular hearing aid for the postoperative ear and thereby obtained successful binaural hearing function.

Gentleness is extremely important to preserve cochlear function at removal of acoustic neurilemmomas. Gentleness is aided by microinstrumentation and surgical craft.

The chances of preserving hearing function at acoustic neurilemmoma excision increase with earlier diagnosis, surgical experience, better instrumentation and attempts at prevention of surgically induced vasospasm of the microvasculature to the cochlea.

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REFERENCES

House WF: Microsurgical removal of acoustic neuromas. Arch Otolaryngol 80:599-756, Dec 1964

Smith MFW, Miller RN, Cox DJ: Suboccipital microsurgical removal of acoustic neurinomas of all sizes. Ann Otol Rhinol Laryngol 82:407-415, Jul-Aug 1973

Avoiding Mismanagement of a Paralyzed Face

THE PRINCIPLES of evaluation and care of a paralyzed face are not well known in the medical community, although the facial nerve is the most commonly paralyzed motor nerve. A paralyzed face has considerable emotional, physical and economic consequences for the patient. The observation of a prolonged total, slowly progressive or recurrent facial paralysis suggests neoplasm and mandates a careful diagnostic evaluation. In addition, trauma, infection and diabetes are common etiologic factors in seventh nerve paralysis. The art of prevention and management of problems of paralyzed faces has improved greatly during the past 15 years.

Clinicians should not be deceived that all facial palsies are Bell palsy (spontaneous idiopathic facial palsy) and that recovery will occur without incident. Careful evaluation and follow-up is always necessary. There are five findings related to facial motor function that tend to rule out Bell palsy:

(1) Simultaneous bilateral facial palsy.

(2) Recurrent unilateral facial palsy. In approximately 30 percent of cases tumors are present.

(3) Unilateral facial weakness which slowly progresses beyond three weeks. This is classically seen with neoplasm.

(4) Slowly progressive unilateral facial weakness associated with facial hyperkinesis.

(5) No return of facial function within six months following an abrupt onset of facial paralysis should strongly suggest a tumor.

Sparing of the forehead in facial paralysis has always suggested a central disorder. However, it is now well-established that the lesion may be peripheral. The orderly spacial arrangement of the facial nerve in the temporal bone can allow partial paralysis to occur.

Topographic diagnostic tests of the seventh nerve function should always be done on a patient with a paralyzed face that is complete, progressive or recurrent. Acoustic reflex studies, comparisons of lacrimal gland function and salivary gland function with the normal side, and taste and electrical tests help isolate the lesion. In addition, the adjacent eighth nerve function (both cochlear and vestibular) should be evaluated and radiographic studies of the temporal bone should be done.

Modern microsurgery has greatly improved the operative management of seventh nerve lesions and their sequelae. Care of paralyzed faces encompasses a host of dynamic and static procedures. Dynamic techniques include surgical removal of neoplasms, correction of traumatic defects, pressure, primary nerve suturing, nerve grafting, anatomic rerouting, seventh nerve crossover from the opposite uninvolved seventh nerve, seven nerve to twelve nerve anastomosis and nerve muscle pedicle grafts. There are now surgical techniques for repair of facial nerve defects intracranially in the internal auditory canal, within the temporal bone and external to the stylomastoid foramen in the soft tissues of the face. A primary seventh nerve repair including grafting is highly successful. Prolonged facial muscle viability may continue despite denervation and allows successful facial nerve repair years after the initial injury.

Static procedures involve (1) resection of redundant skin, (2) fascia lata strip suspension of the face and (3) weakening of the contralateral nonparalyzed musculature. In addition, certain adjunctive procedures complement the basic static and dynamic operations. These include (1) resection of a ptotic melolabial fold, (2) plication of parotid-masseteric fascia, (3) dermal graft suspension, (4) blepharoplasty, (5) brow lift, (6) canthoplasty, (7) horizontal shortening of the lower lid, (8) fascial suspension of the lower lid and (9) palpaebral spring.